REMARKS

This Amendment is submitted in response to the Office Action dated December 23, 2008. Claims 1, 2, 4-13, and 17-25 remain in the application and claims 1, 9, 18, 19, and 22-25 having been amended hereby.

In response paragraph 3 of the Office Action concerning compliance of the drawings with 37 CFR 1.121(d), submitted herewith are new drawings with page number headings removed. In addition, the drawings have been formatted to assure compliance with Rule 121(d).

It is submitted that the claims, as originally presented, are patentably distinct over the prior art cited by the Examiner, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes to these claims, as presented herein, are not made for the purpose of patentability within the meaning of 35 U.S.C. §101, §102, §103, or §112. Rather, these changes are made simply for clarification and to round out the scope of protection to which the Applicants are entitled.

At paragraphs 5-10, the Examiner has rejected claims 1, 18, 19, 23, 24, and 25 for failing to particularly point out and distinctly claim the subject matter the Applicants regard as their invention. Claims 1, 24 and 25 have been amended to recite "a matching algorithm coupled with the processor, wherein the processor uses the matching algorithm to match ..." thus more clearly reciting that the processor performs the operations using the algorithm.

With regard the Examiner's rejection of claims 18, 24, and 25 concerning regular orders, regular orders would be understood to mean orders that are not complex orders, i.e., orders that do not have multiple legs. For example, the specification describes complex orders as "orders with a set of legs representing different financial instruments on the same underlying product." Specification at 38. Each leg may be executed against one or more regular orders. Specification

at 40. Applicants respectfully submit that regular orders are clearly defined as orders that can be executed against an individual leg of a complex order.

With regard to the rejection of claim 19, the claim has been amended to recite the system of claim 9 "wherein the best price information reflects prices for an options contract on at least one away market." Claim 9, from which claim 19 depends, recites that the data interface receives best price information. Thus, there is sufficient antecedent basis for the recited claim elements.

With regard to the rejection of claim 23, the claim has been amended to recite that "the net prices of the plurality of inverse complex orders are determined from the best price information." This best price information would be understood to mean prices for which instruments are bought and sold with the highest bid price or the lowest offer price.

With regard to the rejection of claim 24, the claim has been amended to more clearly recite that the quantities of the legs of the at least one complex order are matched against the plurality of regular orders in the same ratio as the legs have to one another.

The Examiner rejected claims 1-2, 4, 6-8, 10-12, 14-15, 17-18, and 20-21 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,903, 201 to Wagner ("Wagner").

The present invention is directed a system for executing complex orders where each leg of the complex order is executed simultaneously with either corresponding inverse complex orders or regular orders to eliminate leg risk, that is, the risk that less than all the legs of the complex order will execute. Complex orders represent a particular trading strategy that allows an investor to position himself to profit from particular market conditions. If some, but not all of the legs of a complex order are executed, the investor intended strategy will not be achieved and may instead be exposed to unintended market risks. The claims have been amended to more

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clearly recite that finding matching orders for a complex order is done using a matching algorithm. Support for the amendments can be found at pages 40-47. Amended claim 1 recites that the matching algorithm includes:

> a synthetic pricing routine that calculates a synthetic high price and a synthetic low price for the at least one complex order;
> an inverting routine that inverts the net price of each of the inverse complex orders; and
> a sorting routine that sorts the inverse complex orders, determines an inverse complex order with the lowest inverted net price that is less than or equal to the synthetic high price and greater than or equal to the synthetic low price, and matches the at least one complex order with the determined inverse complex order if such an inverse complex order is found.

Applicants respectfully submit that Wagner recites no such matching algorithm. While Wagner does describe a system for trading financial instruments, including straddles, Wagner does not show or suggest matching according to an algorithm as recited according to the amended claims. According to Wagner, participants enter bids and offers through a computer system and the system matches them automatically. (Wagner, col. 3, 30-37.) Matches are made on a first-come-first-served basis. (Id., col. 4, ll. 3-5.) Wagner discloses only that after signals communicating orders to a processor are received, the processor "compares all offers to bids and all bids to offers to see if the orders can be matched." (Id., col. 10, ll. 47-53.) Wagner does not show or suggest an algorithm for matching, much less one recited in the claims for matching complex orders. For at least this reason, Applicants respectfully submit that Wagner does not show or suggest the present, as recited in the claims and does not render the claims unpatentable. For at least the same reasons, claims 2, 4, 6-8, 10-12, 17-18, and 20-21 that depend from claim 1 are likewise not shown or suggested by Wagner.

In addition, claim 2, further recites that "matching each leg of the at least one complex order is contingent on matching all of the legs of the complex order." Wagner discloses a video

monitor that can display certain information including spread relationships or price differential information about contracts that "allows simultaneous spread trades." (Id., col. 3, ll. 53-58.) While such a display would permit an investor to enter orders for contracts for a long position and a short position at the same time, there is nothing in Wagner to suggest that matching orders to create one position is contingent on matching orders to create both positions, as recited in the claims. Indeed, an investor performing the type of trade that the Examiner interprets as being disclosed by Wagner would face the leg risk that the present invention aims to avoid. That is, the system of Wagner could execute orders for the short position and not the corresponding long position, leaving the participant exposed should market prices rise and he is forced to cover the unmatched short position. For this additional reason, Applicants submit that the claim 2 is not shown or suggested by Wagner.

In addition, with respect to claim 10, the claim recites that "the processor is adapted to monitor the memory to determine if the at least one complex order can be matched on the occurrence of a market event." Applicants respectfully submit that Wagner does not disclose a system where matching of a complex order is determined as a result of a market event. While Wagner discloses that trades are monitored and when one results in a new high or low price "the central processor price field and quantity file" are updated (Id., col. 11, ll. 16-19.) Wagner does not show or suggest that an order is matched as a result of a new high or new low price. For this additional reason, claim 10, as well as claims 11 and 12 that depend from claim 10 are also not shown or suggested by Wagner.

In addition, claim 21 recites a matching algorithm that is adapted to match a portion of each leg of the at least one complex order based on the ratio of the legs of the complex order. Wagner does not show or suggest this feature. Wagner teaches that, when only a portion of an

order can be matched, the portion that is not matched is sent back to the order queue and reprocessed. (Id., col. 15, ll. 48-55.) Wagner does not show or suggest that particular portions of an order is sent back to the order queue because execution of that portion would be result an execution outside the ratio of an original complex order. For example, Wagner does not teach preventing full execution of one leg of a straddle, that otherwise is executable, because the other leg of the straddle is not also fully executed. For this additional reason, claim 21 is not shown or suggested by Wagner.

The Examiner rejected claims 3, 23, and 25 under 35 U.S.C. § 103(a) as being unpatentable over Wagner in view of U.S. Patent Application Publication 2003/0004899A1 to Bergenudd ("Bergenudd").

As discussed above, the claims have been amended to recite an algorithm that determines an inverse complex order that can be matched with a complex order by determining synthetic high and low prices and sorting inverse complex orders to determine a matching inverse complex order within the synthetic price range. Claim 23, which depends from claim 1, recites this feature. Amended claim 25 recites the same matching algorithm and, in the event an inverse complex order is not found that can match in that price range, the complex order is matched with one or more regular orders.

As discussed above, Wagner does not show or suggest a system where complex orders are matched according the matching algorithm. The addition of Bergenudd does not cure this defect. Bergenudd discloses a method for determining a net price of a combination order that solves a problem that, because financial instruments are traded at discrete price intervals or "ticks" it is sometimes impossible to find prices for all legs of the order within the spread for each specific leg. (Bergenudd ¶¶ 6 and 7.) Bergenudd addresses this problem by identifying two

different prices for each leg of the combination order and allocating the total quantity for the leg between those two prices to achieve, as closely as possible, an optimum average price. (Bergenudd ¶¶ 19, 22, 23.) Bergenudd does not show or suggest a system that determines if a complex order can be matched against an inverse complex order using an algorithm that compares the net price of inverse complex orders against a synthetic price range of a complex order and, if no inverse complex order has a price within that range, matches the complex order against regular orders. For at least this reason, claims 23 and 25 are not shown or suggested by the cited references.

The Examiner rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Wagner in view of U.S. Patent No. 6,064,985 to Anderson ("Anderson").

Claim 5 depends from claim 1. Wagner, read alone or in combination with Anderson does not show or suggest the invention, as recited in amended claim 1. For those very same reasons, claim 5 is also not shown or suggested by the cited references.

The Examiner rejected claims 9 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Wagner.

Claims 9 and 22 depend from claim 1, and for at least the reasons discussed above with respect to claim 1, they are not shown or suggested by Wagner.

In addition, Wagner does not show or suggest that a synthetic price may be calculated based on best price information as recited in claim 9. Wagner discloses that, when a match is made with a particular order, and that match results in a new high or new low price, the price of that trade is communicated to the commodity file and day file. (Wagner, col. 11, ll. 7-21.) Such a system keeps a record of price discovery that occurs during the course of trading. This information can be communicated to a trader using a portable computer at a remote location (Id.

col. 19, ll. 43-50) Wagner does not suggest that price information received via an interface can be used to determine how to match complex orders with one another or to determine if an inverse complex order is within a synthetic price range for a complex order such that the orders and be matched. For at least this additional reason, Wagner does not show or suggest the invention recited in amended claim 9.

Claim 22 recites "an obvious price error algorithm coupled with the, the obvious price error algorithm preventing matching algorithm from matching the complex order the determined inverse complex order if a price improvement by the determined inverse complex order is greater than an error prevention value." Wagner discloses a trading system where trading cards representing opposite sides of trades are matched and compared with a computer list to identify "out trades" and assure that trades are accurately transcribed. (Id., col. 2, ll. 26-41.) This does not suggest the feature recited in claim 22 of checking matching prices to identify price improvement that reflects an obvious error. In the system of Wagner, as long as trading cards for the buyer and seller match and are at the same price (i.e., does not represent an "out trade") and the information on the cards is accurately reflected in the computer record (i.e., there is no transcription error) then no error will be detected. Such a system would not detect a trade with an anomalous price improvement that is properly transcribed, since the price improvement would be reflected by the record on both the buy side and sell side of the order. For this additional reason, the invention claimed in amended claim 22 is not show or suggested by Wagner.

The Examiner rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Wagner in view of U.S. Patent No. 5,905,974 to Fraiser ("Fraiser").

Claim 13 depends from claim 1, and for at least the reasons discussed above with respect to claim 1, it is not shown or suggested by Wagner, alone or in combination with Fraiser.

The Examiner rejected claim 16 under 35 U.S.C. § 103(a) as being unpatentable over Wagner in view of U.S. Patent No. 6,014,643 to Minton ("Minton").

Claim 16 depends from claim 1, and for at least the reasons discussed above with respect to claim 1, it is not shown or suggested by Wagner, alone or in combination with Minton.

The Examiner rejected claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Wagner in view of U.S. Patent No. 5,101,353 to Lupien ("Lupien").

Claim 16 depends from claim 1, and for at least the reasons discussed above with respect to claim 1, it is not shown or suggested by Wagner, alone or in combination with Lupien.

The Examiner rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over Wagner in view of Bergenudd and in further view of Minton.

As discussed above with respect to claim 1, the present invention is directed a system for executing complex orders where each leg of the complex order is executed simultaneously with either corresponding inverse complex orders or regular orders to eliminate leg risk, that is, the risk that less than all the legs of the complex order will execute. The claims have been amended to more clearly recite that finding matching orders for a complex order is done using a matching algorithm. Support for the amendments can be found at pages 40-47. Amended claim 24 recites that the matching algorithm includes:

> a synthetic pricing routine that calculates a synthetic high price and a synthetic low price for the at least one complex order;
> an inverting routine that inverts the net price of each of the inverse complex orders; and
> a sorting routine that sorts the inverse complex orders, determines that none of the inverse complex orders has an inverted net price that is less than or equal to the synthetic high price and greater than or equal to the synthetic low price, and matches the at least one complex order against the plurality of regular orders.

Applicants respectfully submit that Wagner recites no such matching algorithm for the reasons given above with respect to amended claim 1. While Wagner does describe a system for

trading financial instruments, including straddles, Wagner does not show or suggest matching according to an algorithm as recited according to the amended claims. According to Wagner, participants enter bids and offers through a computer system and the system matches them automatically. (Wagner, col. 3, 30-37.) Matches are made on a first-come-first-served basis. (Id., col. 4, ll. 3-5.) Wagner discloses only that after signals communicating orders to a processor are received, the processor "compares all offers to bids and all bids to offers to see if the orders can be matched." (Id., col. 10, ll. 47-53.) Wagner does not show or suggest an algorithm for matching, much less one recited in the claims for matching complex orders. For at least this reason, Applicants respectfully submit that Wagner does not show or suggest the present, as recited in the claims and does not render the claims unpatentable.

The addition of Bergenudd does not cure this defect. As discussed above with respect to claim 25, Bergenudd discloses a method for determining a net price of a combination order that solves a problem that, because financial instruments are traded at discrete price intervals or "ticks" it is sometimes impossible to find prices for all legs of the order within the spread for each specific leg. (Bergenudd ¶¶ 6 and 7.) Bergenudd addresses this problem by identifying two different prices for each leg of the combination order and allocating the total quantity for the leg between those two prices to achieve, as closely as possible, an optimum average price. (Bergenudd ¶¶ 19, 22, 23.) Bergenudd does not show or suggest a system that determines if a complex order can be matched against an inverse complex order using an algorithm that compares the net price of inverse complex orders against a synthetic price range of a complex order and, if no inverse complex order has a price within that range, matches the complex order against regular orders.

Likewise, Minton does not show or suggest the invention, as recited in amended claim 24. Minton is directed to a system for matching buyers and sellers of securities without the need for a broker. (Minton, col. 1, ll. 9-13.) Minton does not show or suggest a system for matching complex orders.

In addition, amended claim 24 recites that "the quantity of at least one leg of the complex order is a ratio of at least one other leg of the complex order, and wherein the quantities of the legs of the at least one complex order are matched against the plurality of regular orders in the same ratio." None of the cited references show or suggest the matching of a complex order where, when legs of the order are matched against regular orders, the quantities of each leg match are in the same ration as the original complex order.

As discussed above with respect to claim 21, Wagner does not show or suggest this feature. Wagner teaches that, when only a portion of an order can be matched that portion that is not matched is sent back to the order queue and reprocessed. (Wagner, col. 15, ll. 48-55.) Wagner does not show or suggest that particular portions of an order is sent back to the order queue because execution of that portion would be result an execution outside the ratio of an original complex order. For example, Wagner does not teach preventing full execution of one leg of a straddle, that otherwise is executable, because the other leg of the straddle is not also fully executed.

Likewise, Bergenudd does not suggest this feature. Bergenudd, instead teaches that an approximation of an net price for a combination order can be determined by allocating the number of products a leg of a combination order between two different prices such that the average price of the leg comes as close to the optimal average price as possible. (Bergenudd ¶

23.) Bergenudd says nothing about matching legs according a ratio. Minton is not directed to trading of complex orders and also does not show or suggest this feature.

Accordingly, in view of the amendments made to the claims, as well as the above remarks, the Applicants believe the present application is in condition for allowance. An early withdrawal of the Examiner's rejections and issuance of a Notice of Allowance of the present application is earnestly solicited.

Statements appearing above with respect to the disclosures in the cited reference represent the present opinions of the Applicants' undersigned attorney and, in the event that the Examiner disagrees with any such opinions, it is respectfully requested that the Examiner specifically indicate those portions of the respective reference providing the basis for a contrary view.

Applicants authorize the Examiner to charge any additional fees and to credit any overpayments to Deposit Account No. 50-0320.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP
Attorneys for Applicant

By: _____
Stephen J. Lieb
Reg. No. 41,943
Tel. (212) 588-0800